

INSTALLATION MANUAL



Manufactured by

AQUA-AIR MANUFACTURING

47 East 800 South, Ivins, Utah 84738

(435) 673-5712 or (800) 916-5777 FAX (435) 986-4128

Planning your Built-in Total Cleaning System

Locate the Power Unit in an area where it is protected from freezing. Also required are electrical power, hot and cold water and a sanitary drain. Allow access to the power unit to service and change internal debris screen.

Vacuum Inlets for commercial and residential applications are usually located on inside walls, in hallways or at the bottom of stairs. Install sufficient valves to reach and clean every corner, closet and stairway while allowing for furniture and equipment placement. A variety of Inlet Valves are available for in-wall installation as well as a “vacuum inlet / water outlet” for mounting on the surface. Approximately one inlet is needed for every 700 – 800 sq. ‘ (60-70 sq. m.)

Vacuum Tubing and Fittings connect the Vacuum Inlets to the Vacuum Power Unit. The Tubing System is routed either up to an attic or pipe chase, or down to the lower level or basement.

Hot Water Outlets may be provided under a sink or near another hot water source or piped directly to a Water Outlet located adjacent to the Vacuum Inlet. Installation Kits are available to connect to Hot Water Valves under a sink or for Water Outlets in the wall to match adjacent Vacuum Inlets.

Inline Cleaning Chemical Injectors can be used to provide cleaning solution to be used as a pre-spray or as a rinse.

Automobile Interior Cleaning Systems are installed with the Power Unit located in or near the Cleaning Bays or in an adjacent Equipment Room. Cleaning Stations are located either in or between each bay. Use either an Aqua-Air automobile cleaning station or In-wall vacuum inlet, water and pre-spray outlets.

Vacuum Hoses for dry only and wet/dry cleaning with water line, are available in lengths from 25’ to 50’. It is desirable to design a system to use shorter hoses. The use of shorter hose length gives the user more efficient system and one that is easier to use and store.

AQUA-AIR Wet/Dry Installation Components

Vacuum Inlet / Water Outlet In-Wall Mounting Kit

Includes (2) Mounting Plates, Water Outlet with Quick Disconnect, Hayden Vacuum Inlet with rust resistant pins and screws and Matching Water Outlet cover

- **AA134** Hayden Almond Inlet Outlet In-Wall Kit
- **AA135** Hayden White Inlet Outlet In-Wall Kit
- **AA136** Hayden Ivory Inlet Outlet In-Wall Kit

Water Outlet Covers

Matches the Hayden Vacuum Inlets

- **AA156** Hayden Almond
- **AA152** Hayden White
- **AA151** Hayden Ivory

Water Outlets (in-Wall)

- Includes Mounting Plate, Water Outlet with Quick Disconnect, **AA141** Water Outlet

Vacuum Inlet / Water Outlet Surface Mounting Kit with on/off Switch

Vacuum Inlet, Water Outlet with Quick Disconnect and on/off switch in a 3.5" x 3.5" x 11" Box to mount on wall surface.

- **AA131** Inlet/Outlet surface mount with switch

Under-Sink Water Outlet with Quick Disconnect Kit

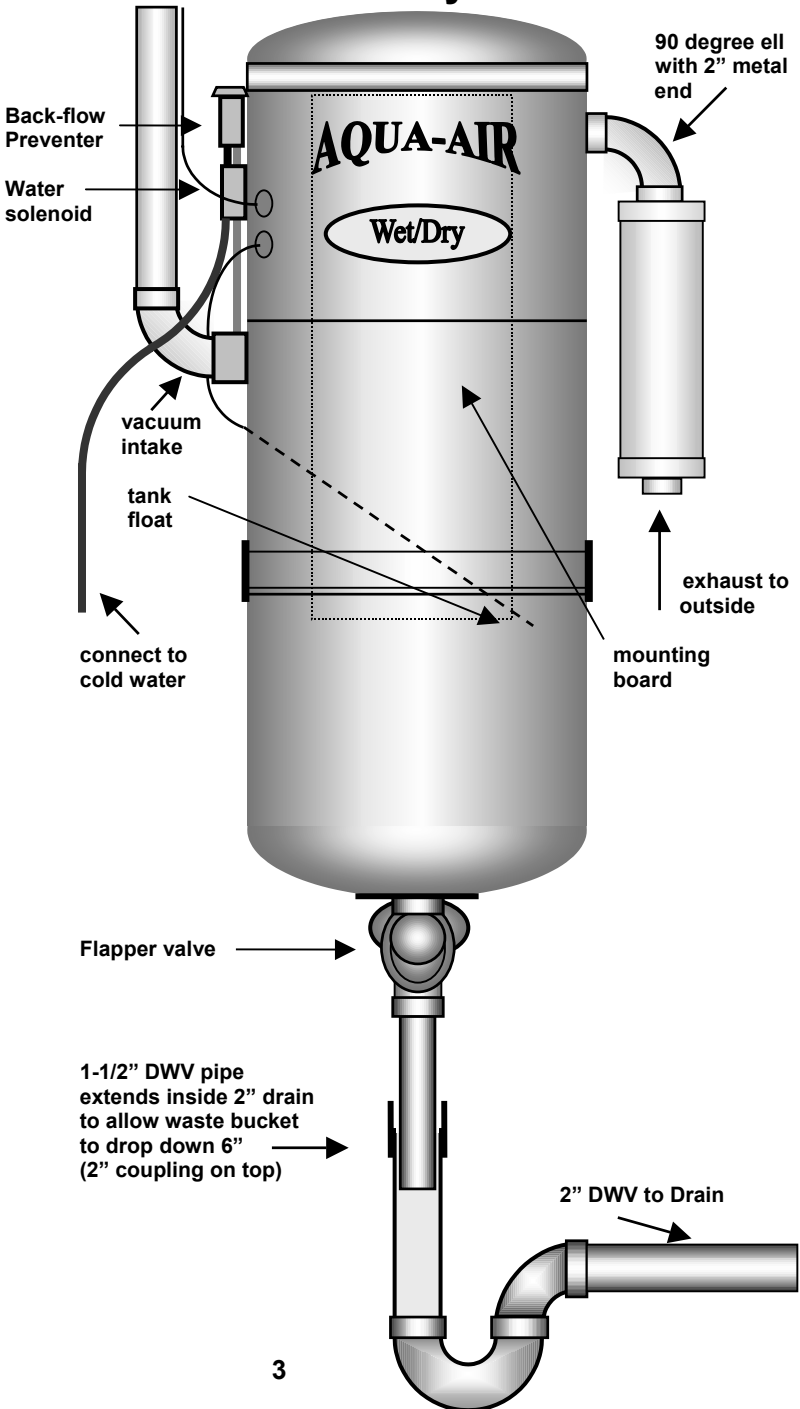
Includes 3/8"C x 3/8"C x 1/4"C Tee, 1/4" hose and Quick Disconnect

- **AA102K** Outlet Kit with 6' hose
- **AA103K** Outlet Kit with 10' hose
- **AA104K** Outlet Kit with 20' hose

Auto Detail Cleaning Station Part #AA124

Complete Cleaning Station including vacuum inlet, water outlet with quick disconnect, pre-spray cleaning solution outlet with quick disconnect, on/off switch and vacuum and pre-spray hose hangers.

AQUA-AIR Wet/Dry Model AA-130/150



Models AA-130 and AA-150

LOCATE the POWER UNIT: in an area where it is protected from freezing. Before installation, assure that there is sufficient height 84" (2m), electrical power (20 amp.[15 amp. Cdn.] 120 VAC), hot and cold water and a sanitary drain. Allow access to service and change debris screen.

POWER UNIT MOUNTING BOARD: (included in shipping box) should be firmly attached to the wall. From the top center of the Mounting Board allow 10" (260 mm) from the ceiling, 18" (460mm) on each side and 67" (1700mm) down to the drain.

EXHAUST: Insert the 90-degree street ell with metal end (included) in Power Unit vacuum motor exhaust. The Exhaust Air should be vented to the outside using as direct a route as possible.

DRAIN to SANITARY SEWER: The Power Unit should be drained into a 2" DWV Stand Pipe connected via a P-trap to the sanitary sewer. Using Teflon tape or sealant on threads, thread the 1-1/2" ABS adapter into the bottom (Do Not Over Tighten)

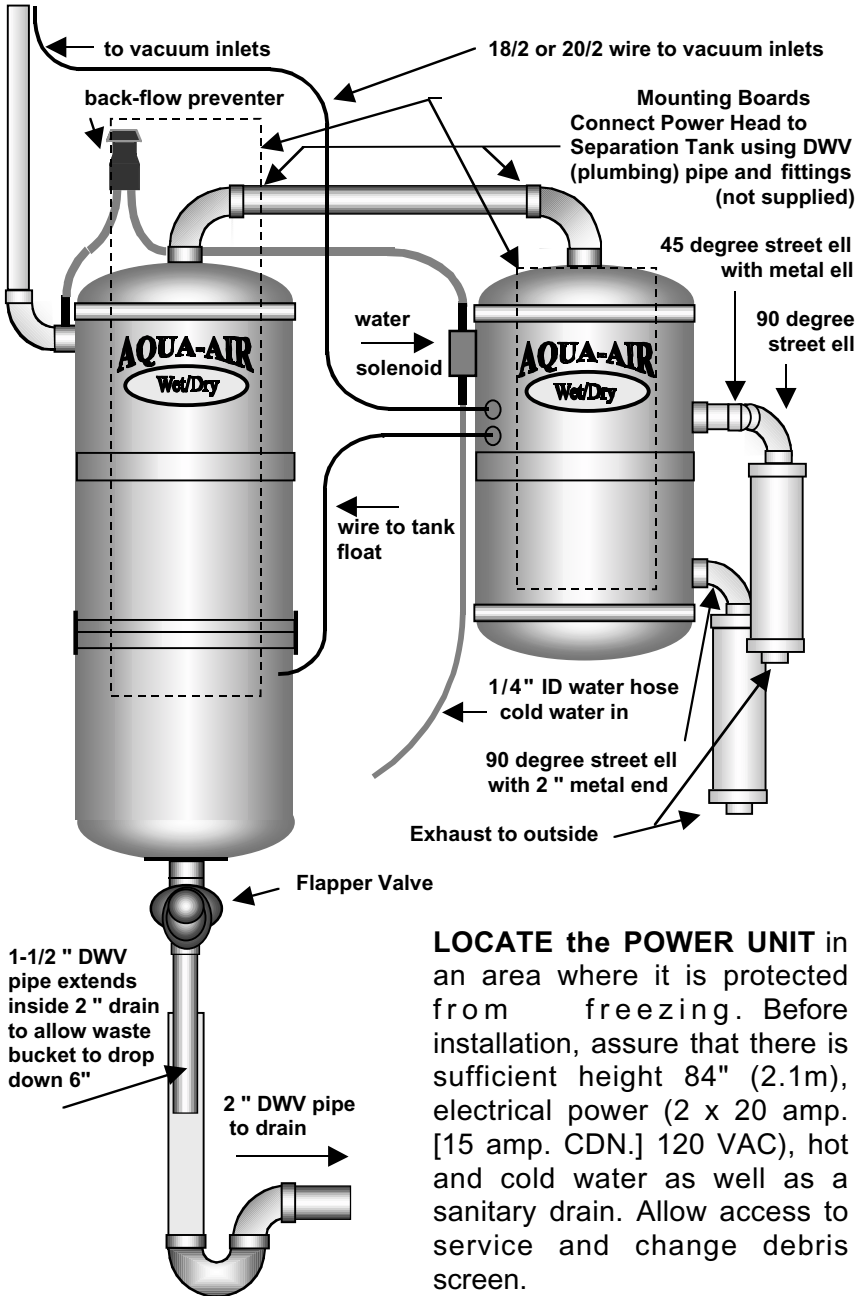
Mount the FLAPPER (check) VALVE at a 45-degree angle using the 1-1/2" 45 degree spigot elbow provided. Connect via another 1-1/2" 45 degree elbow to a 12" (300mm) piece of 1-1/2" DWV pipe extending down inside the 2"DWV Stand Pipe. Allow the Waste Tank to drop 6" (150mm) to service waste tank debris screen.

Water Spray Solenoid and Backflow Preventer: (Located on left side of Power Unit) Connect to cold water faucet using fittings and 1/4"ID hose supplied. Unit is equipped with Watts N388 Anti-Siphon Vacuum Breaker.

ADJUSTING the WATER SPRAY: The Volume of Cold Water sprayed into the Waste tank can be adjusted by the turning the handle of the needle valve located below the Solenoid clockwise to decrease flow.

By lowering the waste tank and starting the Power Unit the flow can be metered by placing a 4 cup (1 l.) measure under the cone to catch the water. Adjust to receive 9 cups (2 l.) per minute.

AQUA-AIR Wet/Dry Model AA-250



LOCATE the POWER UNIT in an area where it is protected from freezing. Before installation, assure that there is sufficient height 84" (2.1m), electrical power (2 x 20 amp. [15 amp. CDN.] 120 VAC), hot and cold water as well as a sanitary drain. Allow access to service and change debris screen.

MOUNTING BOARDS: (included in shipping box) should be firmly attached to the wall. Power Head may be mounted adjacent to Separation Tank or at another convenient location. To mount side by side, from the top center of the Mounting Boards allow 24" (610 mm) between boards, 10" (260 mm) from the ceiling on the Power Unit and 1" (2.5 mm) on the separator tank, 18" (460mm) on each side and 67" (1450mm) down to the drain.

EXHAUST: The Exhaust Air should be Insert the metal end of the 45-degree elbow (included) directed towards the back into the upper motor exhaust. Use a 90-degree street ell and muffler either up or down. Insert the metal end of the 90-degree elbow (included) into the lower motor exhaust. Attach muffler and vent to the outside using as direct a route as possible.

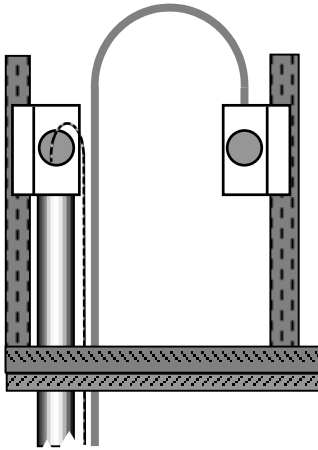
DRAIN to SANITARY SEWER: The Power Unit should be drained into a 2" DWV Stand Pipe connected via a P-trap to the sanitary sewer. Using Teflon tape or sealant on threads, thread the 1-1/2" ABS adapter into the bottom of the Power Unit. (Do Not Over Tighten)

Mount the FLAPPER (check) VALVE at a 45-degree angle toward the wall using the 1-1/2" 45 degree spigot elbow provided. Connect via another 1-1/2" 45 degree elbow to a 12" (300mm) piece of 1-1/2" DWV pipe extending down inside the 2"DWV Stand Pipe. Allow the Waste Tank to drop 6" (150mm) to service waste tank debris screen.

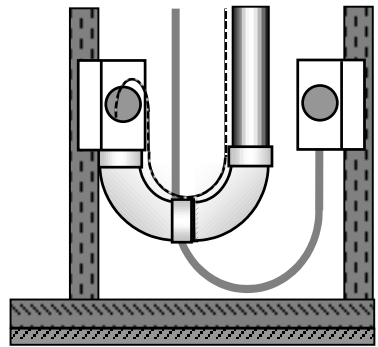
WATER SPRAY SOLENOID: (Located on left side of Power Unit) Connect from cold water faucet to the bottom hose barb on the solenoid using fittings and 1/4"ID Water Hose supplied. Run hose from the top of the solenoid to the inlet of the back-flow preventer on the separation tank mounting board. Connect back-flow outlet to hose barb on the Separation tank inlet.

ADJUSTING the WATER SPRAY: The Volume of Cold Water sprayed into the Waste tank can be adjusted by the turning the handle of the needle valve located below the Solenoid clockwise to decrease flow. By lowering the waste tank and starting the Power Unit the flow can be metered by placing a 4 cup (1 l.) measure under the cone to catch the water. Adjust to receive 9 cups (2 l.) per minute.

In-Wall Vacuum Inlets and Water Outlets



**Rough-in to
under-floor trunk line**



**Rough-into
overhead trunk line.**

Vacuum Inlet - Use 2" O.D. PVC Vacuum Tubing and Fittings.

- Nail or screw mounting plate (PA131 or for 2"x3" walls PA132) to stud, preferably at same height as the electrical plugs.
- Glue (using PVC glue) a Short 90degree elbow (PA089) to the mounting plate (elbow pointing down).
- For under-floor trunk line glue vacuum tubing (PA046) into elbow and extend through floor plate to trunk line.
- For overhead trunk line glue (2) 90degree sweep spigot elbows (PA092) into each other then into short 90degree elbow on the mounting plate. Extend tubing up through top plate to trunk line.

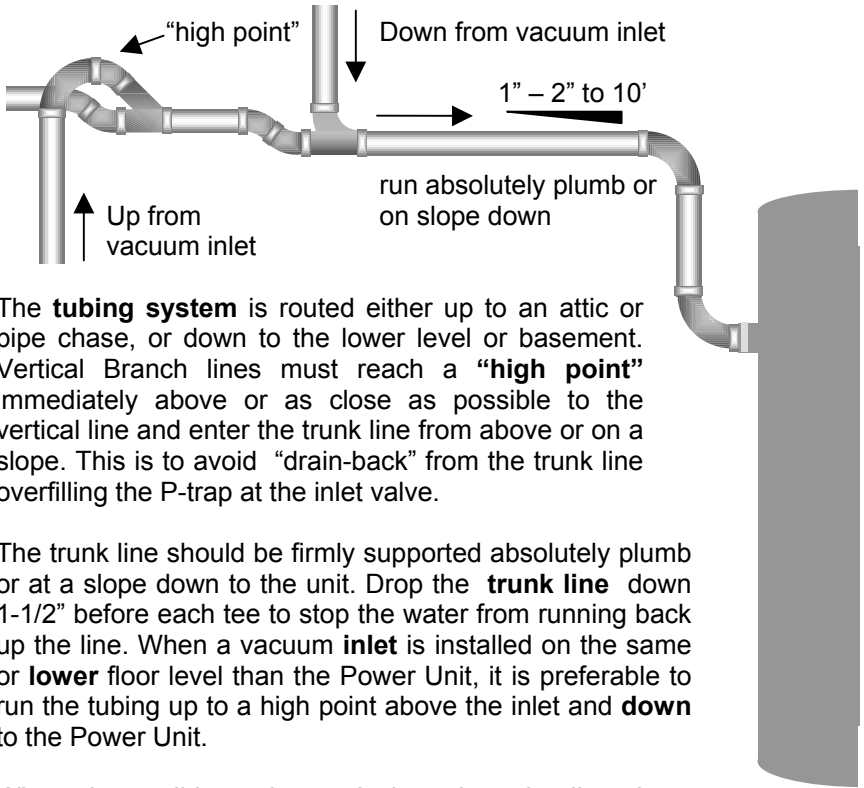
18/2 or 20/2 low voltage control wire.

- Run wire through upper opening on the mounting plate and attach to the vacuum tubing with tie straps. Splice wires at Vacuum Tee or home run each line.

Water Outlet

- Assemble the Water Outlet by gluing quick disconnect to the back of the mounting plate. Note: direct the elbow on the quick disconnect **up** for trunk lines under the floor and **down** for overhead trunk lines. This allows for the tubing to be looped to allow for later servicing of the quick disconnect.
- Connect the water line to the fitting on the back of the quick disconnect and secure water line to vacuum tubing or stud leaving the loop free to move.

Installation of the Vacuum Tubing



The **tubing system** is routed either up to an attic or pipe chase, or down to the lower level or basement. Vertical Branch lines must reach a **"high point"** immediately above or as close as possible to the vertical line and enter the trunk line from above or on a slope. This is to avoid "drain-back" from the trunk line overfilling the P-trap at the inlet valve.

The trunk line should be firmly supported absolutely plumb or at a slope down to the unit. Drop the **trunk line** down 1-1/2" before each tee to stop the water from running back up the line. When a vacuum **inlet** is installed on the same or **lower** floor level than the Power Unit, it is preferable to run the tubing up to a high point above the inlet and **down** to the Power Unit.

Where impossible or impractical to drop the line down before each tee, a **trap** ("speed bump") may be installed before the tee.



Note: Care should be taken that the system is regularly rinsed with water when the following situations exist:

- When it is impossible or impractical to run the line to a high point and then down to the Power Unit
- If the lines are run "plumb" without a drop down before each tee or a trap (speed bump) has been installed in the lines.

2/18 or 2/20 low voltage control wire.

- Splice wires at Vacuum Tee or home run each line.
- Attach to the vacuum tubing with tie straps.
- Connect to Power Unit

To Retrofit an Existing Home or Business

Most buildings can be retrofitted with an Aqua-Air Wet/Dry Cleaning System. Determine that the following exists:

1. A location for the **Power Unit** with drain, water and electricity.
2. Areas in, on or behind walls that the piping could be run to convenient locations for **Vacuum Inlets**.
3. **Vacuum Tubing** can be run from these Inlet locations to the Power Unit through either the attic, a chase, a basement or on the surface of walls in the case of commercial or storage areas.

Vacuum Inlets can be installed in a hollow wall where the depth of the hollow space is 3-1/2" or greater. The wall must be accessible from above, below or through a closet or chase from behind.

NOTE: In-Wall **Water Outlets** (See page 8 and 10) should be installed at the same time as the Vacuum Inlets.

When running the tubing up from under the floor:

Drill 2-1/2" or larger hole directly under the Inlet. After drilling, check to see that the space is unobstructed

- Using a Mounting Plate as a template mark and cut a hole, the same height as electrical plugs, in the drywall or wallboard.
- Remove the side flange of a Mounting Plate and glue on a short bend 90-degree elbow facing down. The control wire should be secured to and come out of the top space in the mounting plate.
- Connect the wire to the two screws on the Vacuum Inlet and install the inlet valve (electrical contacts on the top). Measure and install the vacuum tubing from below the floor.

When running the tubing down from above:

Drill a 2-1/2" or larger hole through the top plates at the center of the hollow space between the studs. After drilling check to see that the space is unobstructed. Drop the electrical control wire down from the top.

- Using a Mounting Plate as a template mark and cut a hole 4" to the left the hole drilled in the top plate and the same height as electrical plugs, in the drywall or wallboard.
- Remove the side flange of a Mounting Plate and glue a short bend 90-degree elbow facing down. Glue a medium spigot ell into a second medium spigot ell. Glue the ells into the short 90 ell extending to the left.
- Secure the control wires to the inside of the medium 90 ell and extend out of the top space in the mounting plate. Insert the mounting plate and ells into the wall. Connect the wire to the vacuum inlet and install the inlet valve (electrical contacts on the top). Measure the vacuum tubing and after gluing outside of the tubing and holding the control wire from above, twist tubing into ell.

- **When installing the tubing behind the wall:** Use a Mounting Plate as a template, mark and cut hole in the drywall. Drill a 2-1/4" hole (centered on first hole) through the back wall.
- Remove the side flange of a Mounting Plate and glue a coupling to the mounting plate. Connect the control wire to the Vacuum Inlet and install the inlet valve (electrical contacts on the top).
- Measure and glue a length of pipe to the coupling and install short bend 90-degree elbow. Complete the tubing for the system.

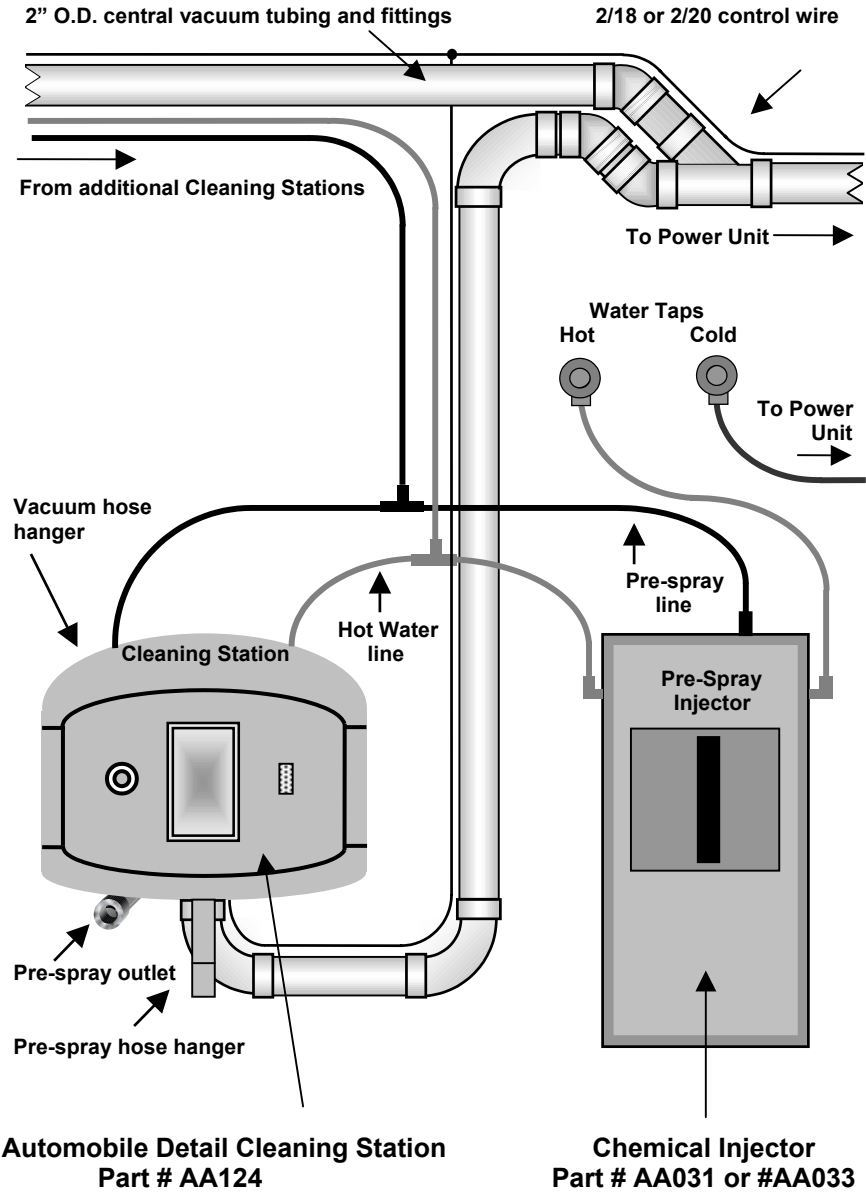
(See Page 11 — Installation of the Vacuum Tubing to complete the cleaning system)

In-Wall Water Outlets: (Locate adjacent to the Vacuum Inlet)

- Using a Mounting Plate as a template mark and cut a hole 6" or more to the left or 7" or more above the Vacuum Inlet. (Be consistent)
- Use 3/8" ID or 1/2" ID PEX (or other approved) tubing for the water lines. Drill hole for the water line in top or bottom plate to the left side of the hollow space.
- To allow for service of the water outlet, loop the tubing above the outlet when coming up from below, or below the outlet when coming down from the top. (See illustration page 8)
- Using **Water Outlet** components (part # AA141 or from Kits #AA134 - 36), remove flange from the side of the mounting plate. (Use the mounting plate that has the 5/16" (9mm) spacer ring on inlet)
- For 1/2" (13mm) thick walls glue quick disconnect cap assembly to the mounting plate using the 5/16" (9mm) spacer ring. Adjust for thicker walls.
- Pull the water tubing out through the hole in the wall and connect to the tubing to 1/2" MPT swivel adapter. Attach tubing adapter to mounting plate assembly.
- Slide the tubing and mounting bracket back into the wall and then pull back to fit snug in the hole. Attach the AQUA-AIR Wet/Dry water outlet covers (AA151 — AA156) to match the vacuum inlet valves being used.

NOTE: The In-wall water outlets terminate with MPT to accommodate the use of a MPT swivel adapter.. By removing the x MPT hex nipple, connection to the tubing can be made with a tubing adapter that terminates in MPT.

Automobile Interior Cleaning System Installation



Automobile Detail Cleaning Station
Part # AA124

Chemical Injector
Part # AA031 or #AA033

Under-Sink Water Outlet Installation

Determine Type of Water Lines:

The hot water supply to a kitchen or vanity sink is usually by one of the following methods:

- A. The standard supply valve which connects onto household plumbing and adapts to a 3/8" copper or plastic tube riser.
- B. 3/8" or 1/2" Poly-B or PEX tubing

Install an Under-Sink Water Outlet on standard supply valve.

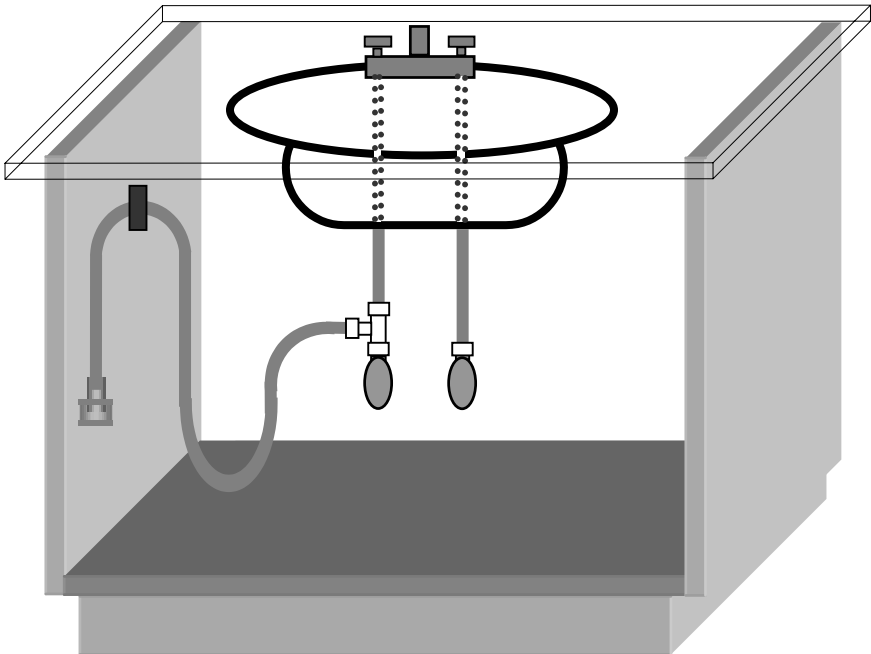
Use an Under-Sink Adapter Kit Part #s AA102K[6'], AA103K[10'] or AA104K [20']

- a. Turn off hot water valve and remove supply tube from valve
- b. Install 3-Way adapter on valve and tighten nut
- c. Cut upper supply tube to length and connect to 3-Way adapter. (It is recommended that you replace this supply tube, thus assuring a good seal.)
- d. Strap hose to cabinet or wall to supply strain relief for 3-Way valve. Use a small hose rack for longer lengths of hose.

Install an Under-Sink Water Outlet on PEX or Poly-B tubing

Obtain from a plumbing supply the appropriate tee, valve and adapters to 1/8" female pipe thread.

- a. Turn off hot water valve and remove supply tube from valve
- b. Install tee, valve and adapters to 1/8" female pipe thread.
- c. Connect braid hose Part #'s AA102[6'], AA103[10'] or AA104 [20']. Use 2 (Part # BR122) brass 1/4" mpt x 1/4" ferule adapters on each end of the braid hose.
- d. Connect adapter hose 1/8" female adapter Installed in (b) above.
- e. Install female 1/8" disconnect on other end of hose and secure hose



Vacuum Tubing and Fittings

PA046	Pipe Vacuum 2" OD
PA088	Ell 90 degree short socket
PA089	Ell 90 degree Short
PA090	Ell 90 degree Medium Spigot
PA091	Ell 90 degree Sweep
PA092	Ell 90 degree Sweep Spigot
PA093	Ell 45 degree
PA094	Ell 45 degree Spigot
PA095	Ell 45 degree Spigot Grey
PA087	Tee 90 degree
PA096	Wye 45 degree
PA097	Coupling Stop
PA098	Inlet Valve Extension
PA045	Muffler Round
PA086	Muffler Square
PA131	Mounting Plate 2x4
PA132	Mounting plate 2x3
PA140	Plaster Guard Hayden
PA134	Coupling reducing 2" x 1.63 Grey
PA135	Pipe Strap 2"
PA136	Pipe Strap 2-1/4"
PA137	Pipe Cap
PA099	Inlet Valve VacuValve Ivory
PA100	Inlet Valve VacuValve White
PA101	Inlet Valve VacuValve Black
PA138	Inlet Valve Hayden White
PA138R	Inlet Valve Hayden White Rust Resistant
PA139	Inlet Valve Hayden Ivory
PA139R	Inlet Valve Hayden Ivory Rust Resistant
PA141	Inlet Valve Hayden Almond
PA141R	Inlet Valve Hayden Almond Rust Resistant
PA142	Inlet Valve Hayden Metal Antique Brass

Cleaning Solution Injector

AA031 (water flow adjustable) with bypass

Use this injector for commercial application where water flow adjustment is required for large floor tools or bypass is required.

AA033 (adjustable for dilution rate)

Use this injector for automobile interior cleaning pre-spray.

Locate the Injector adjacent to the Power Unit or a Hot Water Faucet.

- Attach Injector Box to wall using (6) pan head screws.
- Connect to Hot Water faucet using kit supplied. (10' of 3/8" hose and faucet adapter)
- Connect the water tubing from the in-wall outlets or pre-spray outlets to the Pre-Spray/Rinse outlet on the top of the Injector Box.
- For Automobile Interior Cleaning remove the brass plug on the left side of the injector box and connect to the tubing from the water outlet on the automobile cleaning station. (See illustration on page 7)

Vacuum Inlet / Water Outlet Surface #AA131

- Remove Vacuum Inlet cover by removing the two screws.
- Remove front cover from Inlet/Outlet Box by prying gently with a flat blade screwdriver at each of the (8) tab locations. Pull down to allow the brass pipe and fittings to slide through top cap and towards you and completely remove cover.
- Securely mount the box to a flat surface with four screws. Run the control wire in through the small hole behind the brass pipe leaving 3" slack inside box. Connect ends to the switch. To control the Motor through the inlet valve run one wire direct to the valve, the other to the switch and a jumper wire to the other contacts.
- Replace the cover and snap into place over tabs. Install Vacuum Inlet using the (2) #10 x 1" Screws Provided.
- You are now ready to connect the vacuum tubing, water line and control wire to the box.

Auto Detail Cleaning Station Part #AA124

- To open cover, remove the Valve Inlet by removing the (2) screws. Pull on the right side open to open the front cover.
- Attach the box firmly to the wall with flat screws through the back.
- Run the control wire from the switch on each station to the Power Unit. Close the cover and reinstall the vacuum inlet.
- To run the vacuum tubing up to an over-head trunk line, glue a 90 degree sweep spigot elbow into the coupling on the bottom of the cleaning station. Run the tubing to the side and up to trunk line.
- Run pre-spray line from the left brass fitting on the top of each station to the pre-spray outlet on the injector and water line from the right fitting to the water outlet on the injector.

IMPORTANT

This information included in this Installation Manual is intended to be of assistance in the Installation of the AQUA-AIR Wet/Dry Built-in Total Cleaning Systems.

Each jurisdiction may have specific codes and regulations with regard to appliances that are installed in buildings and connected to their water and drain systems. It is your responsibility to verify local codes as regards to equipment and qualification of trades-persons used in the installation of these systems.

AQUA-AIR Manufacturing does not warranty the installation or the materials used in installation of these systems.